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ABSTRACT

As part of a study to test the feasibility of expanding computer use within the Montana business community, computer systems were field tested in four Montana small businesses. The four businesses were a newspaper, an advertising agency, a sheep and cattle ranch, and a private investment company. The companies employed from 3 to 20 persons. Three of the businesses purchased IBM PCs or XTs, while the fourth business leased its computer. Three of the businesses are using floppy disks for data storage. The software needs of the four businesses were identified through interviews with employees and managers. Based on specifications of the businesses, a literature search was conducted to determine the types of available software that would be suitable, and software packages were examined at computer stores to determine software compatibility with and suitability for the precise needs of each business. Employees were trained and each software system was field tested. The study showed that canned programs could be used for most needs of small businesses, thus keeping costs to a minimum. It was also found that persons who are not specially trained in the use of computers could be adequately trained to operate the systems through a short but intensive hands-on training period. However, the study also concluded that, although persons without former computer knowledge could operate the systems, a computer specialist was necessary in the early phases of adoption of a computer system. It was recommended that a computer specialist be consulted to assist a given business in determining the computer system that best suits the specific needs of that business. (KC)

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ECO NORTHWEST, Ltd.

Consultants in Economics, Planning, and Resource Management
Eugene • Portland • Helena • Boise

FIELD TESTING SELECTED MICRO COMPUTER SOFTWARE

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Vocational Education Services
Capitol Station
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I. INTRODUCTION

The Department of Vocational Education Services of the Office of Public Instruction (OPI) contracted with Economic Consultants Northwest, Ltd. (ECO) to study the feasibility of enhancing economic development within Montana by expanding computer use in small businesses. The first phase of this study was a statewide mail survey to determine the current status of computer utilization and the potential for expanding computer use within the Montana business community. The results of this survey were presented to OPI in an earlier report ("Using Personal Computers to Promote Economic Development" April, 1984).

This report, the final phase of the study, focuses on the field testing of computer systems in four Montana small businesses. To analyze software needs of specific types of businesses in Montana, ECO selected four businesses that were in the process of automation to participate in this study. This report discusses the findings of the field testing and presents recommendations for future software development with respect to the specific industries.

II. METHODOLOGY

A. Selection of Businesses

Four businesses that were in the process of either purchasing or leasing a small computer system were selected by ECO and asked to participate in this study. The four participating businesses were:

1) Thrifty Nickel
520 Grand
Billings, MT 59101

2) Judge Advertising
221 5th Avenue
Helena, MT 59601

3) Sieben Live Stock Company
7 Edwards
Helena, MT 59601

4) Capri Inc.
516 Fuller Avenue
Helena, MT 59601

Each business represents a different industry type which allows for a broad interpretation of small business needs in Montana. Table 1 lists the businesses and provides a general description of the type of business together with an approximate employee count. Sieben Live Stock Company employed the highest number of employees, while Capri Inc. employed the least number of employees.

Table 2 identifies the type of computer each business purchased or leased. All of the businesses except Thrifty Nickel purchased an IBM computer. Three of the four businesses

TABLE 1

BUSINESS BY TYPE

Business	Type	Number of Employees
Thrifty Nickel	Newspaper	5-8
Judge Advertising	Advertising Agency	5-7
Sieben Live Stock Company	Sheep & Cattle Ranch	10-20
Capri Inc.	Private Investment Company	3-5

Note: These businesses were either in the process of purchasing or leasing a computer or were beginning to look at different systems.

TABLE 2

BUSINESS BY HARDWARE TYPE

Business	Lease/ Purchase	Hardware	Internal Memory	Storage Capacity
Thrifty Nickel	Lease	NorthStar	64K	Floppy 2
Judge Advertising	Purchase	IBM PC	128K	Floppy 2
Sieben Live Stock Company	Purchase	IBM PC	512K	Floppy 2
Capri Inc.	Purchase	IBM XT	128K	Hard Disk

purchased IBM PCs or XTs. The fourth business (Thrifty Nickel) is leasing their computer on a lease-purchase option.

Three of the four businesses are using diskettes (floppy disk) for data storage (see Table 2). While this sort of storage is somewhat cumbersome to use and the chances of data failure are high, this did not seem to be of great concern to the owners. In any case, these types of computers seem to be the most popular and have proved adequate for most small business operations.

B. Defining Software Needs

The software needs of the four businesses were identified through interviews with the appropriate employees and managers. Based on specifications of the businesses, a literature search was conducted to determine the types of software available that would be compatible with their software needs. Additionally, specific packages were examined at computer stores to determine software compatibility and suitability with the precise needs of each business.

Table 3 lists the major application of the software for the businesses. The software application for each business was unique in that each business used the software to satisfy a certain facet of their business. In some cases, the businesses needed a more extensive software package; however, due to time and budget constraints it would have been impossible to fulfill

TABLE 3

BUSINESS BY SOFTWARE APPLICATION

Business	Application
Thrifty Nickel	Accounts Receivable and Billing
Judge Advertising	Word Processing*
Sieben Live Stock Company	General Ledger/Financial Reporting
Capri Inc.	Portfolio Management

* Special programming for an accounting system package is presently being done for Judge Advertising.

all their needs. Therefore, efforts were made to devise a suitable system which allowed the business to test certain software applications but which may not have completely allowed automation of their entire business.

C. Training and Field Testing

Each software application differed from site-to-site; therefore, the training and field testing of each software package were different. For example, Thrifty Nickel uses their accounts receivable system weekly, while Sieben Live Stock Company runs a general ledger system monthly. The following sections describe in detail the field testing of the software and training of the employee in each business.

1. Thrifty Nickel

The Thrifty Nickel, a weekly want ad newspaper in Billings, needs to bill both commercial customers and private individuals who purchase want ads. Because their billing is done each Thursday and Friday, the accounts receivable package that was purchased for the Thrifty Nickel needed to have enough flexibility to run an aging report on a time scale different than the usual 30-60-90 day cycle. In addition, the package needed to provide the flexibility of printing bills on different report forms.

The software package selected for the Thrifty Nickel is in use in many businesses throughout the United States and has

proved to be a reliable product. The Thrifty Nickel has been running this package since November, 1983, with no missed billing.

The training of employees required approximately 24 hours of on-site, hands-on experience. Several telephone calls and return visits to Billings were required in order to answer specific questions.

This package was the most expensive of all the four businesses to install. The cost of travel far exceeded the price of the software. Therefore, to be more cost efficient, it was decided that future software assistance would have to be done at sites nearer to Helena.

2. Judge Advertising

Judge Advertising, a Helena based advertising firm, needed word processing as well as a specialized billing and general ledger system. ECO purchased a word processing system called Easywriter II for Judge Advertising and trained them on the use of the system.

Total training time was approximately 16 hours and the package has been used for about three months. Judge Advertising is also in need of a billing system which ECO is assisting them in system design and programming. This accounting package will require some specialized programming.

3. Sieben Live Stock Company

Sieben Live Stock Company is a sheep and cattle operation north of Helena. Prior to purchasing an IBM PC, they were using an antiquated Burroughs Computer System. ECO purchased a general ledger system for Sieben and trained them on the use of the system. This system has been in operation about three months and they are quite pleased with it.

Training time for this installation was approximately 30 hours. Because of specialized needs in financial reporting, ECO spent an additional 20 hours designing the output format.

4. Capri Inc.

Capri Inc., a private investment company, needed a software package that was flexible enough to use with both stocks and bonds and to produce quarterly tax and dividend reports. ECO purchased a package called "Portfolio Management System" and spent approximately four hours training two people from Capri on the use of the system. Currently, Capri has not used the package extensively; however, the system does appear to be meeting their needs based on limited testing.

III. EVALUATION

Although numerous modifications were needed to ensure compatibility between hardware and software, "canned" programs were primarily used, except in the case of Judge Advertising. The billing system of Judge Advertising will require specialized programming because it is not compatible with any existing software package.

The proven adaptablity of canned programs enhances the attractiveness of computer use for small businesses. By using existing software, costs can be kept to a minimum, the probability of programming errors is reduced, and existing user manuals are readily available.

Based on the field testing of the software in the four small businesses, it became apparent that persons who are not specially trained or experienced in the use of computers could be adequately trained to operate the systems. Through a short but intensive hands-on training period, all the small business operators trained in this study were able to comprehend the software packages and could independently run the necessary programmed procedures. Lack of previous computer experience does not appear to preclude more extensive computer use by business enterprises in Montana.

Although it was determined that persons without former computer knowledge could operate the systems once they were trained, it was also clear that a computer specialist was

necessary in the early phases of adoption of a computer system. Because each business has specific needs, it is usually not within the scope of expertise of those not trained in computer use to accurately determine which hardware and software are most appropriate. When a business is considering acquisition of either hardware of software, a computer specialist should be consulted to assist in determining the computer system which best suits specific needs of that business.